

Appl. No. 09/746,188

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A computing apparatus for handling hard handoffs within a wireless network in which mobile terminals can be in communication with a first radio sector, the computing apparatus comprising:

hard handoff determination logic that operates to determine if a hard handoff from the first radio sector to a second radio sector is desirable for at least one mobile terminal; and

network resource allocation logic that is triggered by the hard handoff determination logic, if the hard handoff is necessary, and operates to request allocation of at least one network resource associated with the second radio sector for at least one mobile terminal; to determine if the allocation of the at least one network resource associated with the second radio sector is successful; and, if the allocation fails, to request the at least one mobile terminal be placed within a dormant mode, in which communication between the at least one mobile terminal and the first radio sector is suspended; and,

hard handoff determination logic that operates to determine if a hard handoff from the first radio sector to the second radio sector is desirable for the at least one mobile terminal and, if the hard handoff is necessary, to trigger the operation of the network resource allocation logic for the at least one mobile terminal within the second radio sector.

2. (Previously presented) A computing apparatus according to claim 1, wherein the network resource allocation logic further operates to continue to request allocation of the at least one network resource associated with the second radio sector for the at least one mobile terminal after the allocation has previously failed; to determine if the allocation of the at least one network resource associated with the second radio sector is successful after the allocation has previously failed; and, if the allocation is successful, to request the at least one mobile

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terminal be placed within a connected mode, in which communication between the at least one mobile terminal and the second radio sector is established.

3. (Original) A computing apparatus according to claim 2, wherein, if a plurality of mobile terminals have been placed within the dormant mode, the network resource allocation logic further operates to select a predetermined queue order for requesting the dormant mobile terminals to be placed within the connected mode.

4. (Cancelled)

5. (Previously presented) A computing apparatus according to claim 1, wherein the hard handoff determination logic operates to determine if a hard handoff is necessary for the at least one mobile terminal by receiving and processing Pilot Strength Measurement (PSM) messages from the at least one mobile terminal.

6. (Previously presented) A computing apparatus according to claim 1, wherein, if the allocation of the at least one network resource associated with the second radio sector for the at least one mobile terminal is successful, the network resource allocation logic further operates to request the de-allocation of any network resources associated with the first radio sector for the at least one mobile terminal.

7. (Previously presented) A computing apparatus according to claim 1, wherein the network resource allocation logic further operates to request allocation of the at least one network resource associated with the second radio sector for the at least one mobile terminal if the allocation has previously failed; to determine if the allocation of the at least one network resource associated with the second radio sector is successful after a previous failure; and, if the allocation is successful, to request the at least one mobile terminal be placed within a connected mode, in which communication between the at least one mobile terminal and the second radio sector is established.

8. (Previously presented) A computing apparatus according to claim 7, wherein the network resource allocation logic further operates to determine whether a predetermined time period has expired since the at least one mobile terminal has been requested to be placed within the

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dormant mode and, if the predetermined time period has expired, to request the de-allocation of any network resources associated with the first radio sector for the at least one mobile terminal.

9. (Previously presented) A computing apparatus according to claim 1, wherein the at least one network resource associated with the second radio sector comprises a Data Traffic Channel (DTC) between the at least one mobile terminal and a Radio Access Port (RAP).

10. (Previously presented) A computing apparatus according to claim 1, wherein the at least one network resource associated with the second radio sector comprises a Dedicated Signalling Channel (DSC) between the at least one mobile terminal and a Radio Access Port (RAP).

11. (Previously presented) A computing apparatus according to claim 1, wherein the at least one network resource associated with the second radio sector comprises a Segmentation and Distribution Unit (SDU) within a Radio Access Port (RAP).

12. (Previously presented) A computing apparatus according to claim 1, wherein the network resource allocation logic requesting the at least one mobile terminal be placed within a dormant mode comprises requesting the at least one mobile terminal to suspend communications on any of its previously established communication channels.

13. (Previously presented) A computing apparatus according to claim 2, wherein the network resource allocation logic requesting the at least one mobile terminal be placed within the dormant mode comprises requesting the at least one mobile terminal to suspend communications on any of its previously established communication channels; and

wherein the network resource allocation logic requesting the at least one mobile terminal be placed within the connected mode comprises requesting the at least one mobile terminal to end the suspension of communications on its previously established communication channels.

14. (Previously presented) A computing apparatus according to claim 1, wherein the network resource allocation logic determining if the allocation of the at least one network associated

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with the second radio sector is successful comprises monitoring for an allocation failure message, the reception of the allocation failure message indicating that the allocation of at least one network resource associated with the second radio sector failed.

15. (Cancelled)

16. (Cancelled)

17. (Currently amended) A computing apparatus arranged to control allocation of network resources for a mobile terminal from a first radio sector to a second radio sector during a hard handoff of a communication link with the mobile terminal from the first radio sector to the second radio sector, the computing apparatus comprising:

means for determining if a hard handoff from the first radio sector to the second radio sector is desirable for the mobile terminal;

means for attempting allocation of at least one network resource associated with the second radio sector for the mobile terminal if the hard handoff is desirable;

means for determining if the allocation of the at least one network resource associated with the second radio sector is successful; and

means for requesting the mobile terminal be placed within a dormant mode if the allocation of the at least one network resource associated with the second radio sector fails, in which communication between the mobile terminal and first radio sector is suspended; and

means for determining if a hard handoff from the first radio sector to the second radio sector is desirable for the mobile terminal;

wherein the means for attempting allocation of at least one network resource associated with the second radio sector for the mobile terminal operate for the mobile terminal within the second radio sector if the hard handoff is desirable.

18. (Previously presented) A computing apparatus according to claim 17, wherein the means for attempting allocation of at least one network resource associated with the second radio

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sector for the mobile terminal and the means for determining if the allocation is successful continue to operate after the allocation has previously failed; and

wherein the computing apparatus further comprises means for requesting the mobile terminal be placed within a connected mode if the allocation is successful after a previous failure.

19. (Cancelled)

20. (Previously presented) A computing apparatus according to claim 17 further comprising means for requesting de-allocation of any network resources associated with the first radio sector for the mobile terminal if the allocation of the at least one network resource associated with the second radio sector for the mobile terminal is successful.

21. (Currently amended) A method for allocating network resources, during a hard handoff from a first radio sector to a second radio sector, for a mobile terminal comprising:

means for determining if a hard handoff from the first radio sector to the second radio sector is desirable for the mobile terminal;

attempting to allocate at least one network resource associated with the second radio sector to the mobile terminal if the hard handoff is desirable; and

if the allocation of the at least one network resource fails, requesting the mobile terminal be placed within a dormant mode, in which communication between the mobile terminal and the first radio sector is suspended.

22. (Previously presented) A method according to claim 21 further comprising:

attempting to allocate the at least one network resource associated with the second radio sector to the mobile terminal after the allocation has previously failed; and

if the allocation of the at least one network resource is successful after previously failing, requesting the mobile terminal be placed within a connected mode.

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23. (Currently amended) A method for performing a hard handoff of a mobile terminal from a first radio sector to a second radio sector comprising:

means for determining if a hard handoff from the first radio sector to the second radio sector is desirable for the mobile terminal;

determining if network resources of the second radio sector are sufficient for the mobile terminal if the hard handoff is desirable; and

if the network resources of the second radio sector are not sufficient for the mobile terminal, instructing the mobile terminal to be placed within a dormant mode until sufficient network resources for the mobile terminal are available, in which communication between the mobile terminal and the first radio sector is suspended.

24. (Original) A wireless communication network comprising:

first and second Radio Access Ports (RAPs) that operate to communicate with mobile terminals within at least first and second radio sectors respectively; and

a computing apparatus that operates:

(a) to detect if a mobile terminal communicating with the first RAP requires a hard handoff from the first radio sector to the second radio sector;

(b) to attempt to allocate at least one resource associated with the second RAP to the mobile terminal if a hard handoff is required; and

(c) to request the mobile terminal be placed into a dormant mode if the attempt to allocate the at least one resource fails.

25. (Original) A network according to claim 24, wherein the computing apparatus comprises a Handoff Manager (HM) and a Radio Link Access (RLA), the HM performing operation (a) and the RLA performing operations (b) and (c) with instructions from the HM.

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26. (Currently amended) A computing apparatus for handling hard handoffs within a wireless network in which mobile terminals can be in communication with a first radio sector, the computing apparatus comprising:

hard handoff determination logic that operates to determine if a hard handoff from the first radio sector to a second radio sector is necessary for the at least one mobile terminal; and

network resource allocation logic that is triggered by the hard handoff determination logic, if the hard handoff is necessary, and operates to determine the availability of at least one network resource associated with a the second radio sector and, if the at least one network resource associated with the second radio sector is determined to have insufficient bandwidth for current traffic, to request at least one of the mobile terminals be placed within a dormant mode, in which communication between the at least one of the mobile terminals and the first radio sector is suspended; and,

hard handoff determination logic that operates to determine if a hard handoff from the first radio sector to the second radio sector is necessary for the at least one mobile terminal and, if the hard handoff is necessary, to trigger the operation of the network resource allocation logic for the at least one mobile terminal within the second radio sector.

27. (Original) A computing apparatus according to claim 26, wherein the network resource allocation logic selects the at least one of the mobile terminals to be placed within a dormant mode based upon a priority system.

28. (Previously presented) A computing apparatus according to claim 26, wherein the network resource allocation logic further operates to determine the availability of the at least one network resource associated with the second radio sector and, if the at least one network resource associated with the second radio sector is determined to have sufficient bandwidth for current traffic and the mobile terminal placed within the dormant mode, to request the mobile terminal be placed within a connected mode, in which communication between the at least one mobile terminal and second radio sector is established.

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29. (Previously presented) A computing apparatus according to claim 28, wherein, if a plurality of mobile terminals have been placed within the dormant mode, the network resource allocation logic further operates to select a predetermined queue order for requesting the dormant mobile terminals to be placed within the connected mode with the second radio sector.
